

Claims

1. through 4. (Cancelled)

5. (Currently amended) ~~The method of claim 4~~ A method comprising:

retrieving state configuration information from a state server of a hardware/software co-simulation, the hardware/software co-simulation comprising:

simulation of at least one memory device by a logic simulator, the logic simulator comprising a memory interface model and a memory store;

simulation of a microprocessor at least in part by a first bus interface model, the simulation of the microprocessor executing software stored in the simulation of the at least one memory device;

a first kernel managing access to the memory store; and

a second kernel comprising a co-simulation manager and a memory manager;

providing a client of the hardware/software co-simulation access to a server state of the state server based on the state configuration information, wherein the state configuration information comprises memory mapping, symbol allocation, and symbol type;

registering the client with a co-simulation interface, wherein registering the client comprises assigning the client a client identifier; and

associating the client with at least one state server in the hardware/software co-simulation.

6. (Currently amended) ~~The method of claim 4~~ A method comprising:
retrieving state configuration information from a state server of a hardware/software co-
simulation, the hardware/software co-simulation comprising:
simulation of at least one memory device by a logic simulator, the logic simulator
comprising a memory interface model and a memory store;
simulation of a microprocessor at least in part by a first bus interface model, the
simulation of the microprocessor executing software stored in the simulation of the at least one
memory device;
a first kernel managing access to the memory store; and
a second kernel comprising a co-simulation manager and a memory manager;
providing a client of the hardware/software co-simulation access to a server state of the state
server based on the state configuration information, wherein the state configuration information
comprises memory mapping, symbol allocation, and symbol type;
registering the client with a co-simulation interface; and
associating the client with at least one state server in the hardware/software co-simulation,
wherein associating the client with at least one state server comprises providing the client with a list of
available state servers and one or more address spaces associated with each of the available state
server.
7. (Original) The method of claim 6 wherein said client is to retain an identifier for at least
one address space from the list.

8. (Original) The method of claim 6 wherein said client is to return a selection from the list and wherein associating the client with at least one state server further comprises providing the client an identifier for at least one address space from the list based on the selection.

9. (Cancelled)

10. (Cancelled)

11. (Currently amended) ~~The method of claim 10~~ A method comprising:
retrieving state configuration information from a state server of a hardware/software co-
simulation, the hardware/software co-simulation comprising:
simulation of at least one memory device by a logic simulator, the logic simulator
comprising a memory interface model and a memory store;
simulation of a microprocessor at least in part by a first bus interface model, the
simulation of the microprocessor executing software stored in the simulation of the at least one
memory device;
a first kernel managing access to the memory store; and
a second kernel comprising a co-simulation manager and a memory manager;
providing a client of the hardware/software co-simulation access to a server state of the state
server based on the state configuration information, wherein the state configuration information
comprises memory mapping, symbol allocation, and symbol type; and
requesting the state configuration information, said state configuration information to define at
least one memory location comprising the server state, wherein requesting the state configuration
information comprises:
receiving a client identifier for the client at a co-simulation interface;
receiving an identifier for an address space at the co-simulation interface, said server
state being within the address space; and
issuing a request from the co-simulation interface, said request including the client
identifier and the identifier for the address space.

12. (Original) The method of claim 11 wherein the request is to be serviced by the state server, said state sever to access a symbol table indicated by the identifier for the address space and to provide the state configuration information based on the symbol table.

13. (Previously presented) The method of claim 11 where a path of the request comprises an interprocess connection and a debugger.

14. (Cancelled)

15. (Currently amended) ~~The method of claim 14~~ A method comprising:
retrieving state configuration information from a state server of a hardware/software co-
simulation, the hardware/software co-simulation comprising:
simulation of at least one memory device by a logic simulator, the logic simulator
comprising a memory interface model and a memory store;
simulation of a microprocessor at least in part by a first bus interface model, the
simulation of the microprocessor executing software stored in the simulation of the at least one
memory device;
a first kernel managing access to the memory store; and
a second kernel comprising a co-simulation manager and a memory manager; and
providing a client of the hardware/software co-simulation access to a server state of the state
server based on the state configuration information, wherein the state configuration information
comprises memory mapping, symbol allocation, and symbol type, wherein providing the client access
comprises performing a memory operation on at least one memory location based on the state
configuration information, wherein performing the memory operation comprises at least one of:

reading the server state;

modifying the server state;

receiving the server state at a predetermined future time; and

receiving notification upon a predetermined action on the server state.

16. (Currently amended) ~~The method of claim 14~~ A method comprising:
retrieving state configuration information from a state server of a hardware/software co-
simulation, the hardware/software co-simulation comprising:
simulation of at least one memory device by a logic simulator, the logic simulator
comprising a memory interface model and a memory store;
simulation of a microprocessor at least in part by a first bus interface model, the
simulation of the microprocessor executing software stored in the simulation of the at least one
memory device;
a first kernel managing access to the memory store; and
a second kernel comprising a co-simulation manager and a memory manager; and
providing a client of the hardware/software co-simulation access to a server state of the state
server based on the state configuration information, wherein the state configuration information
comprises memory mapping, symbol allocation, and symbol type, wherein providing the client access
comprises performing a memory operation on at least one memory location based on the state
configuration information, wherein performing the memory operation comprises:
generating a request for the memory operation, said request including a memory
allocation from the state configuration information;
accessing a memory map; and
issuing the memory operation to a unified memory for the hardware/software co-
simulation based on the memory allocation and the memory map.

17. (Original) The method of claim 16 further comprising:

receiving data in response to the memory operation; and

interpreting the data based on a symbol type defined by the state configuration information.

18. (Cancelled)

19. (Currently amended) ~~The method of claim 18~~ A method comprising:

retrieving state configuration information from a state server of a hardware/software co-simulation, the hardware/software co-simulation comprising:

simulation of at least one memory device by a logic simulator, the logic simulator comprising a memory interface model and a memory store;

simulation of a microprocessor at least in part by a first bus interface model, the simulation of the microprocessor executing software stored in the simulation of the at least one memory device;

a first kernel managing access to the memory store; and

a second kernel comprising a co-simulation manager and a memory manager;

providing a client of the hardware/software co-simulation access to a server state of the state server based on the state configuration information, wherein the state configuration information comprises memory mapping, symbol allocation, and symbol type;

receiving a stimulus based on the server state; and

applying the stimulus to the hardware/software co-simulation, wherein the stimulus comprises data to be injected into the hardware/software co-simulation in response to a predetermined condition associated with the server state.

20. through 26. (Cancelled)

27. (Currently amended) ~~The method of claim 26,~~ A method comprising:

retrieving state configuration information from a state server of a hardware/software co-simulation, the hardware/software co-simulation comprising:

simulation of at least one memory device by a logic simulator, the logic simulator comprising a memory interface model and a memory store;

simulation of a microprocessor at least in part by a first bus interface model, the simulation of the microprocessor executing software stored in the simulation of the at least one memory device;

a first kernel managing access to the memory store; and

a second kernel comprising a co-simulation manager and a memory manager; and

providing a client of the hardware/software co-simulation access to a server state of the state server based on the state configuration information, wherein the state configuration information comprises memory mapping, symbol allocation, and symbol type, wherein the memory mapping comprises a plurality of memory addresses corresponding to the server state, and wherein providing comprises:

accessing a plurality of memory locations based on the plurality of memory addresses corresponding to the server state;

assembling a plurality of data bits occupying the plurality of memory locations; and

interpreting the assembly of the plurality of data bits based at least in part upon the symbol type.

28. (Currently amended) The method of claim 1 5, wherein the state server comprises at least one component that contains and allows for exporting of the state configuration information to the client.

29. (Currently amended) The method of claim 1 5, wherein the state server comprises a hardware process.

30. (Currently amended) The method of claim 1 5, wherein the state server comprises a software process.

31. (Original) The method of claim 16, wherein the memory map maps at least one address corresponding to the simulation of the at least one memory device.

32. (Original) The method of claim 16, wherein the memory map represents a plurality of address spaces.

33. (Currently amended) The method of claim 1 5, wherein the memory interface model represents input and output behavior of the at least one memory device.

34. (Currently amended) The method of claim 1 5, wherein the simulation of the microprocessor comprises simulation at least in part by a first instruction set simulator.

35. (Original) The method of claim 34, wherein the first bus interface model represents input and output behavior of the simulation of the microprocessor.

36. (Original) The method of claim 34, wherein the co-simulation manager monitors transactions between the first instruction set simulator and the first bus interface model.

37. (Currently amended) The method of claim ~~4~~ 5, wherein the first kernel and second kernel are the same kernel.

38. (Original) The method of claim 34, wherein the hardware/software co-simulation further comprises a simulation of a digital signal processor, the digital signal processor having a corresponding address space and a corresponding symbol table.

39. (Original) The method of claim 38, wherein the simulation of the digital signal processor comprises simulation at least in part by a second instruction set simulator and a second bus interface model.

40. (Original) The method of claim 34, wherein the hardware/software co-simulation further comprises a simulation of a generic co-simulation client, the generic co-simulation client having a corresponding address space and a corresponding symbol table.

41. (Original) The method of claim 40, wherein the generic co-simulation client is simulated by a second instruction set simulator and a second bus interface model.

42. (Currently amended) The method of claim ~~4~~ 5, wherein the memory manager manages access to the memory store by the second kernel.